The Future of Air Cargo

for the

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ACI NORTH AMERICA
AIRPORTS COUNCIL INTERNATIONAL

FEDERAL AVIATION ADMINISTRATION

NBAA

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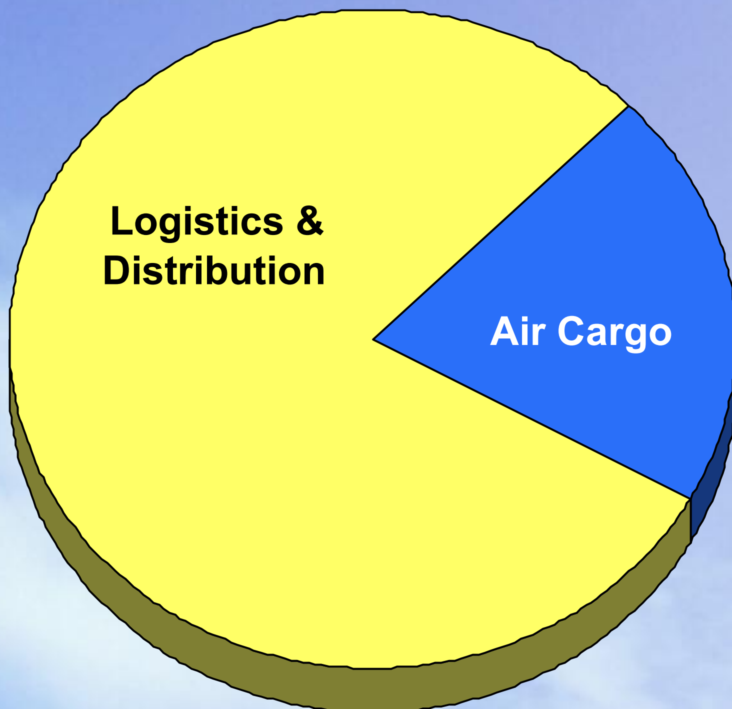
World Air Cargo is a Forty-One Billion Dollar Business

Air Logistics



Air Logistics Total - $205 Billion

Top 30 World Carriers of Air Cargo Based on 1998 FTKs

U.S. Carriers move

26%!

'97	'98		(Millions)
1.	1.	I - Federal Express	9698
2.	2.	C - Lufthansa	6696
4.	3.	I - United Parcel	5909
3.	4.	C - Korean Air	5225
6.	5.	C - Singapore	4919
5.	6.	C - Air France	4595
9.	7.	C - United	4407
10.	8.	C - British	4277
8.	9.	C - Cathay Pacific/AHK	4173
7.	10.	C - JAL	4088
11.	11.	C - KLM	3885
13.	12.	C - NCA/ANA	3409
14.	13.	C - American	3176
12.	14.	C - Northwest	3145
15.	15.	C - PRC Airlines	3046
16.	16.	C - China	2871
18.	17.	C - Delta	2764
19.	18.	F - Cargolux	2688
17.	19.	C - EVA Air	2543
21.	20.	C - Swissair	2518
22.	21.	C - Martinair	1817
20.	22.	C - Asiana	1778
23.	23.	C - Qantas	1761
24.	24.	C - Thai	1548
NR	25.	C - Continental	1533
25.	26.	C - Alitalia	1522
NR	27.	F - Polar	1466
27.	28.	C - Malaysia	1464
28.	29.	I - Emery Worldwide	1407
NR	30.	F - American Intl.	1325
			99653 FTKs

Represents 74% of world traffic

C - Passenger and freight operator
F - All freight operator
I - Integrated services operator
NR - No ranking or no report

Source: IATA, ICAO and U.S. DOT F41, Direct Reports

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The Future of Air Cargo

Agenda

- **Market Conditions**
- **Air Cargo Traffic Forecast**
- **Freighter Fleet Forecast**
- **Summary**

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Market Conditions

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Air Cargo Industry Performance

	1997 Increase		1998 Increase	
Cargo Capacity				
Passenger	14.0%	16.8%	9.0%	10.9%
Freighter	21.0%		14.5%	
Combi	17.0%		9.6%	
Traffic	10.1%		2.0%	
Yield				
U.S. Domestic	-3.8%		-------	
International	*-12.0%*		*-5.7%*	

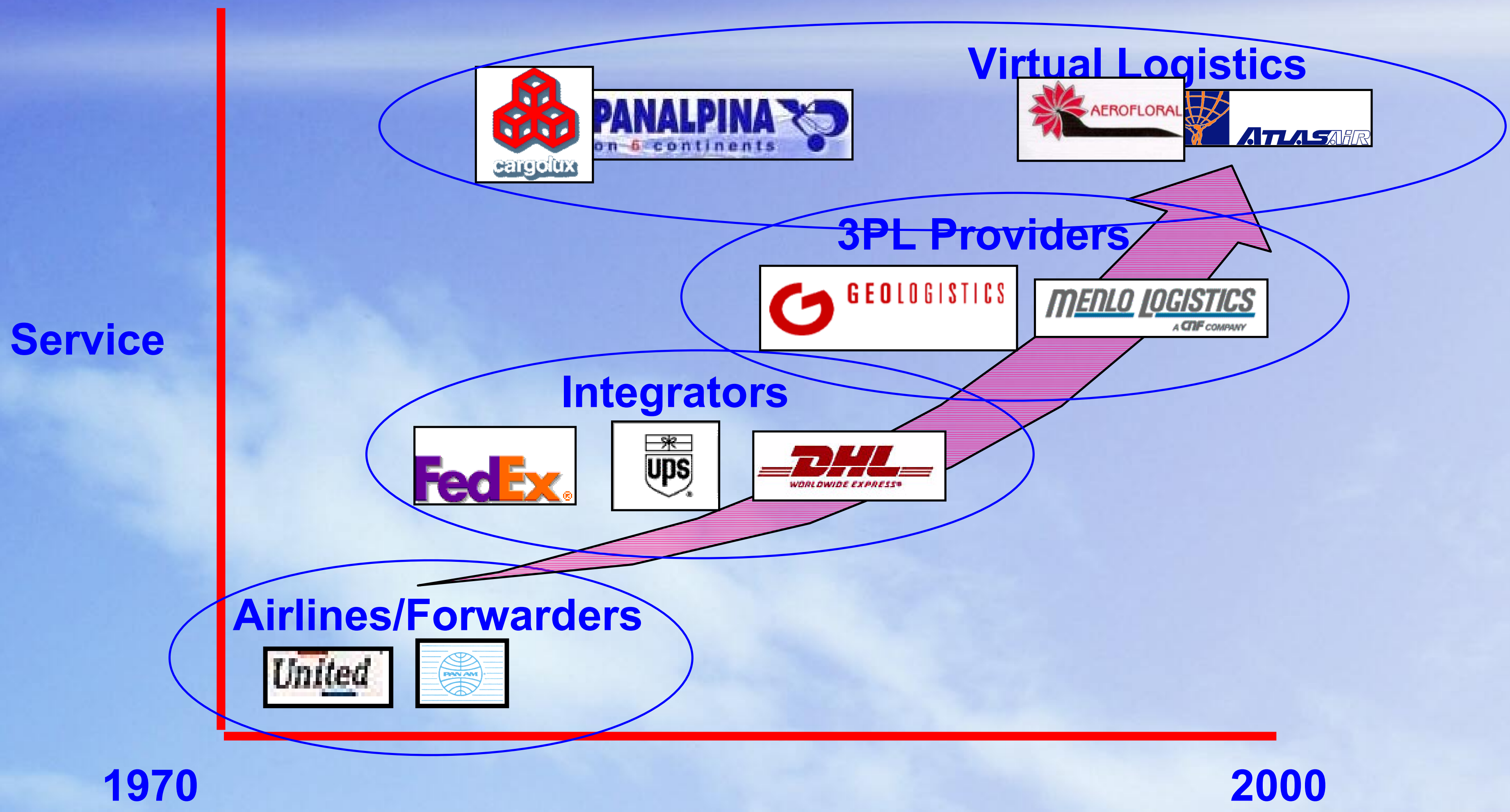
World Air Cargo Growth Continues, Albeit Slower Than a Few Years Ago...

	1996	1997	1998	1999
World	7.7%	10.1%	2.0%	*~4.0%*
Intra-Asia	7.2%	7.0%	-2.9%	
North America - Asia	6.4%	12.3%	-3.5%	
Europe - Asia	13.2%	10.2%	-2.0	
North America	3.2%	6.8%	1.0%	
Europe - North America	7.9%	10.3%	11.6%	
Latin America - North America	5.7%	12.7%	3.8%	

Current International Operating Environment

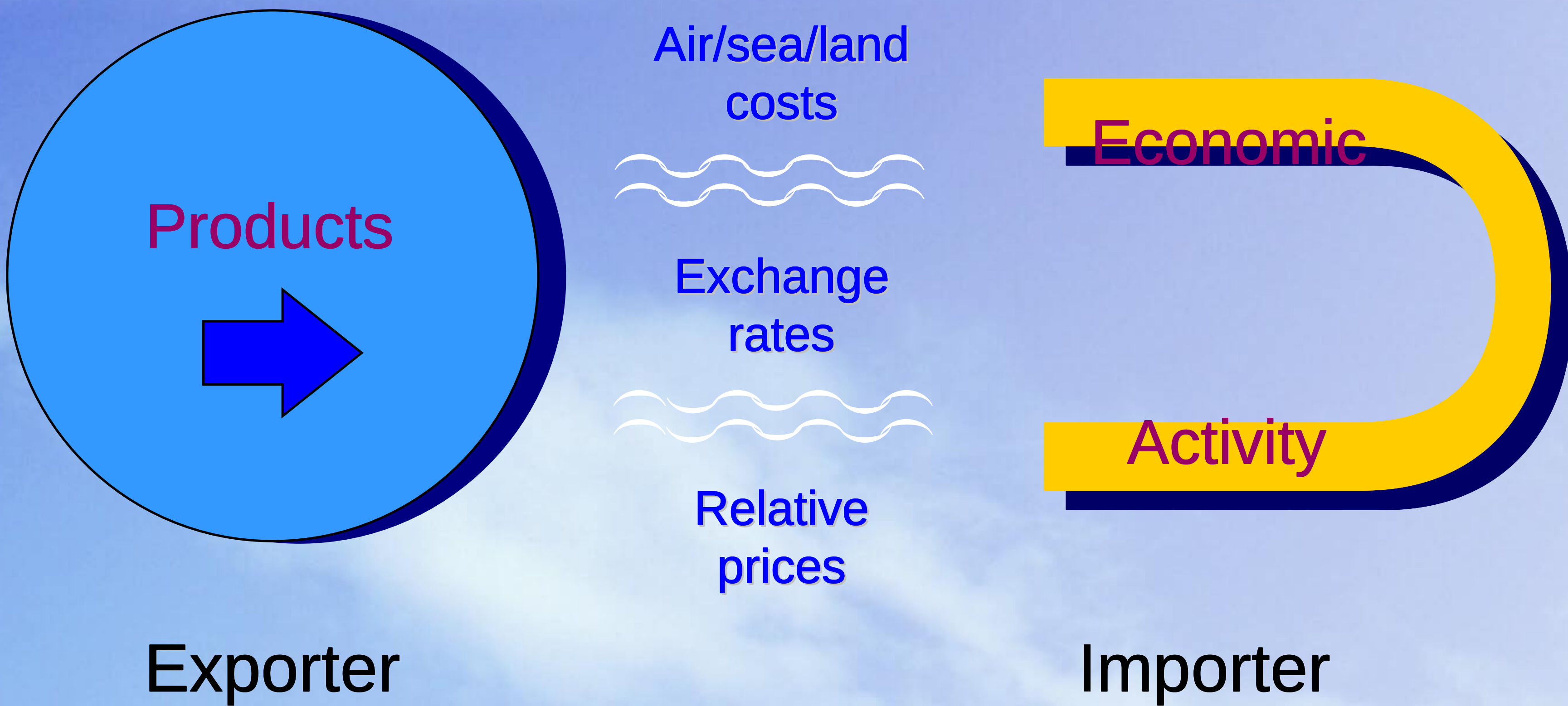
- World traffic growth continues recovery with many Asian markets registering double-digit 1999 increases.
- Asian market is imbalanced with low yields, but trends are encouraging.
- Market still controlled by air carrier/forwarder combinations. Combination carriers increasingly offer time definite/retail and express carriers heavy/forwarder services. Both drive renewed demand for pure freighter operations.
- "JIT" production/distribution, supply chain management and 'e-commerce' sales stimulate traffic.
- Regulatory focus on both noise and aging issues is causing freighter fleet re-evaluations.

Who Will Manage Future Air Logistics?

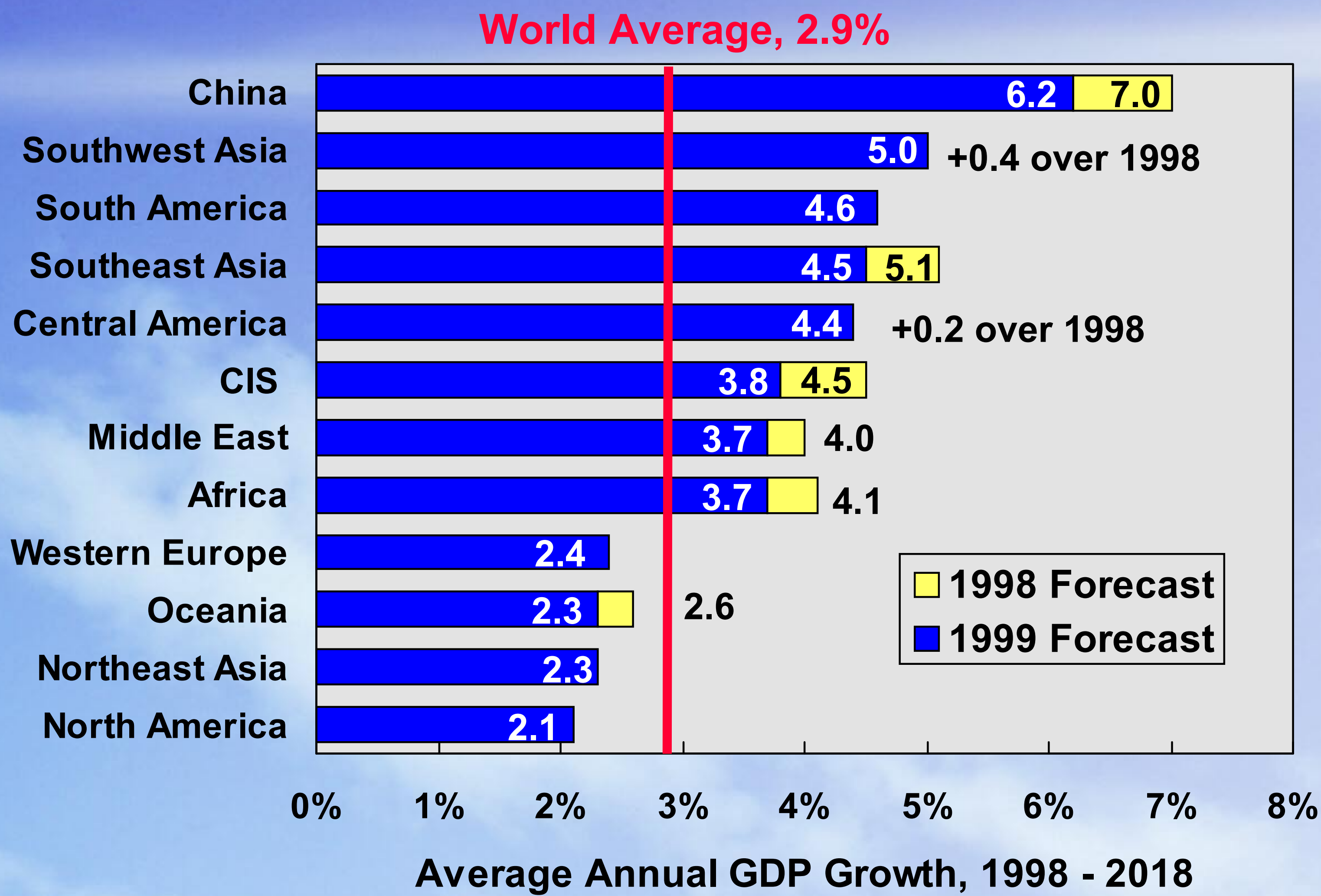


Air Cargo Traffic Forecast

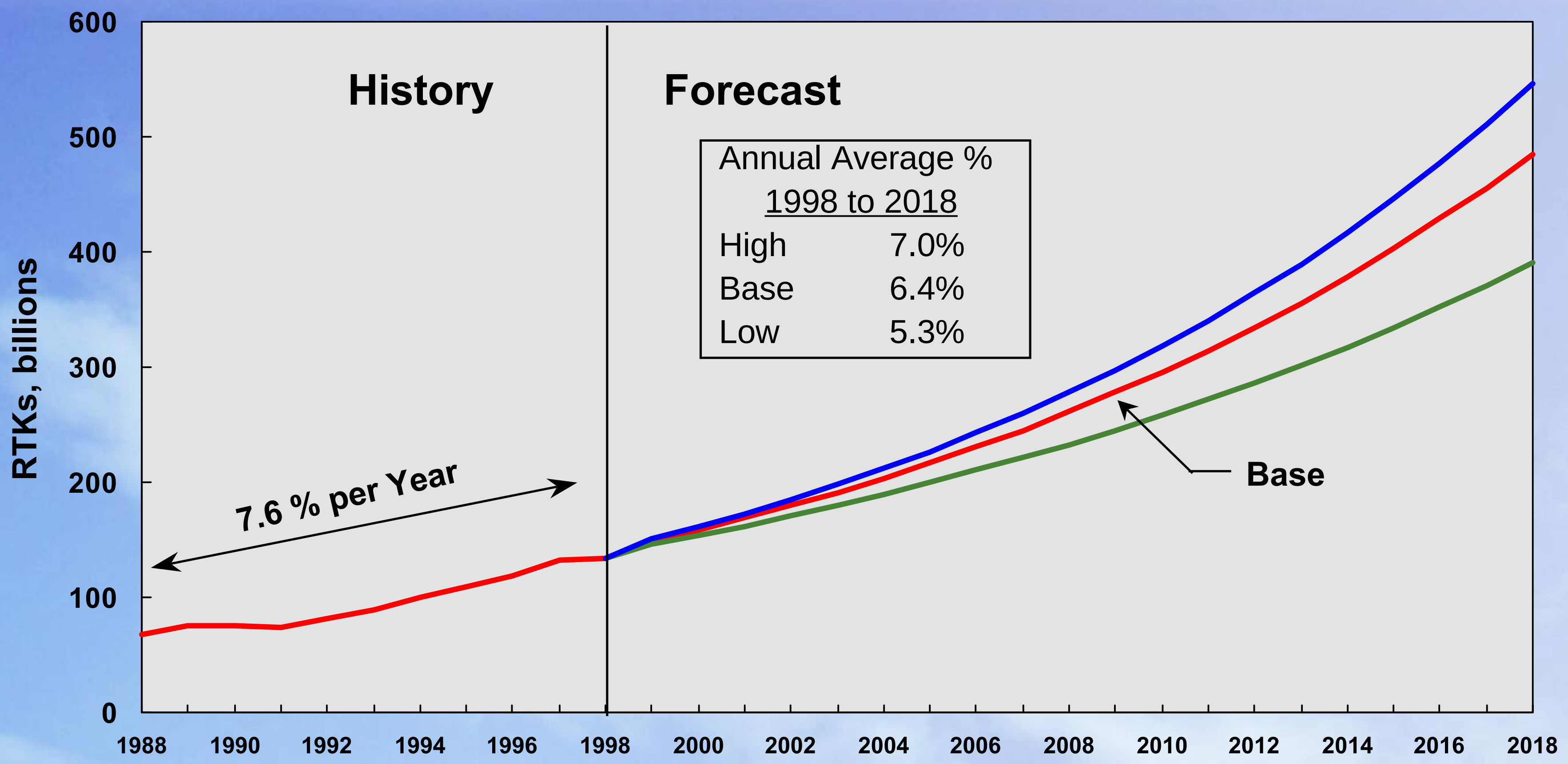
Air Cargo Traffic is Based on "Demand-Pull" Concept



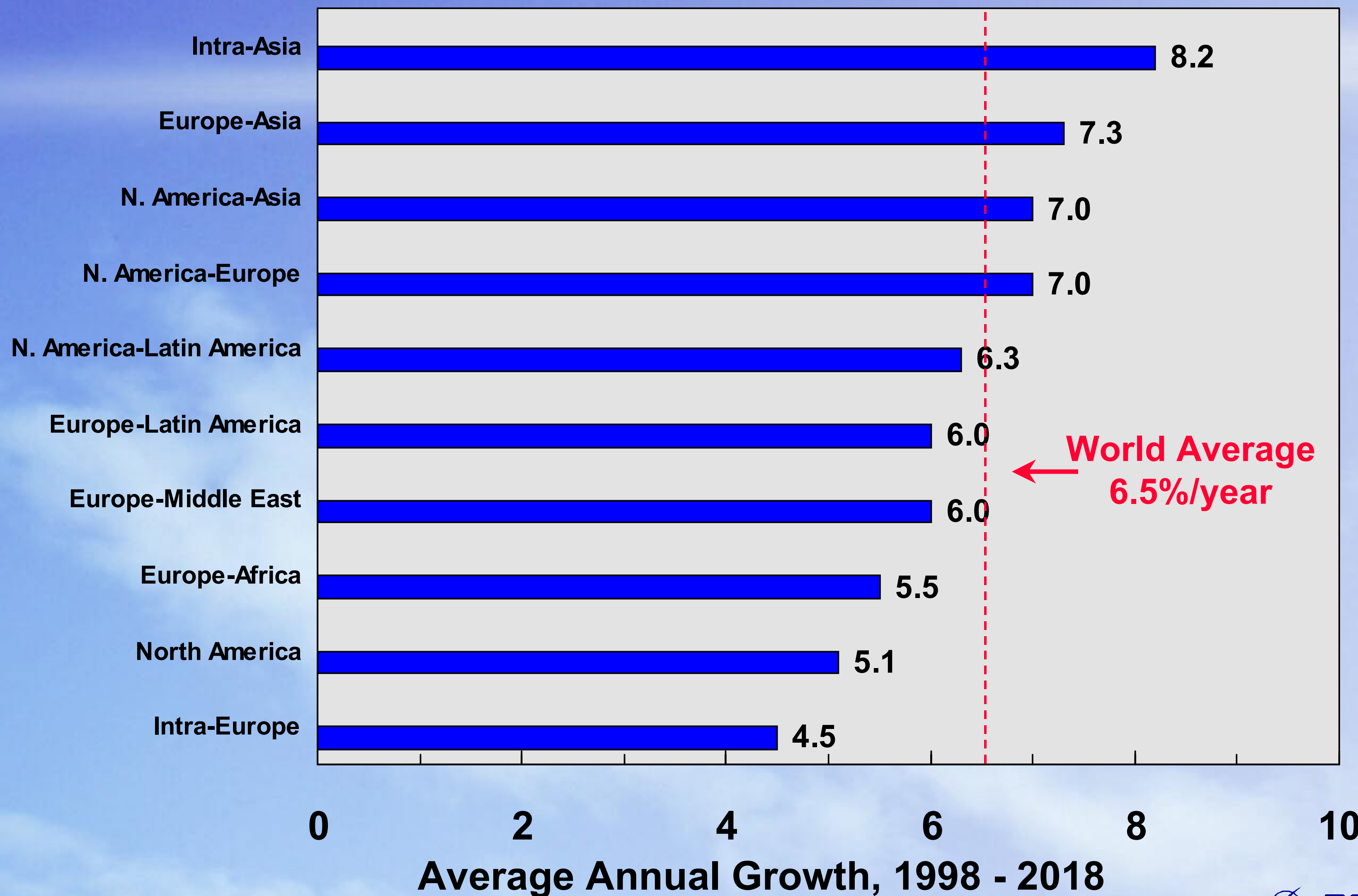
Economic Growth Drives International Trade



World Air Cargo Traffic Is Expected to More Than ***Triple*** Over the Next 20 Years



Asian Freight Markets Will Lead Growth



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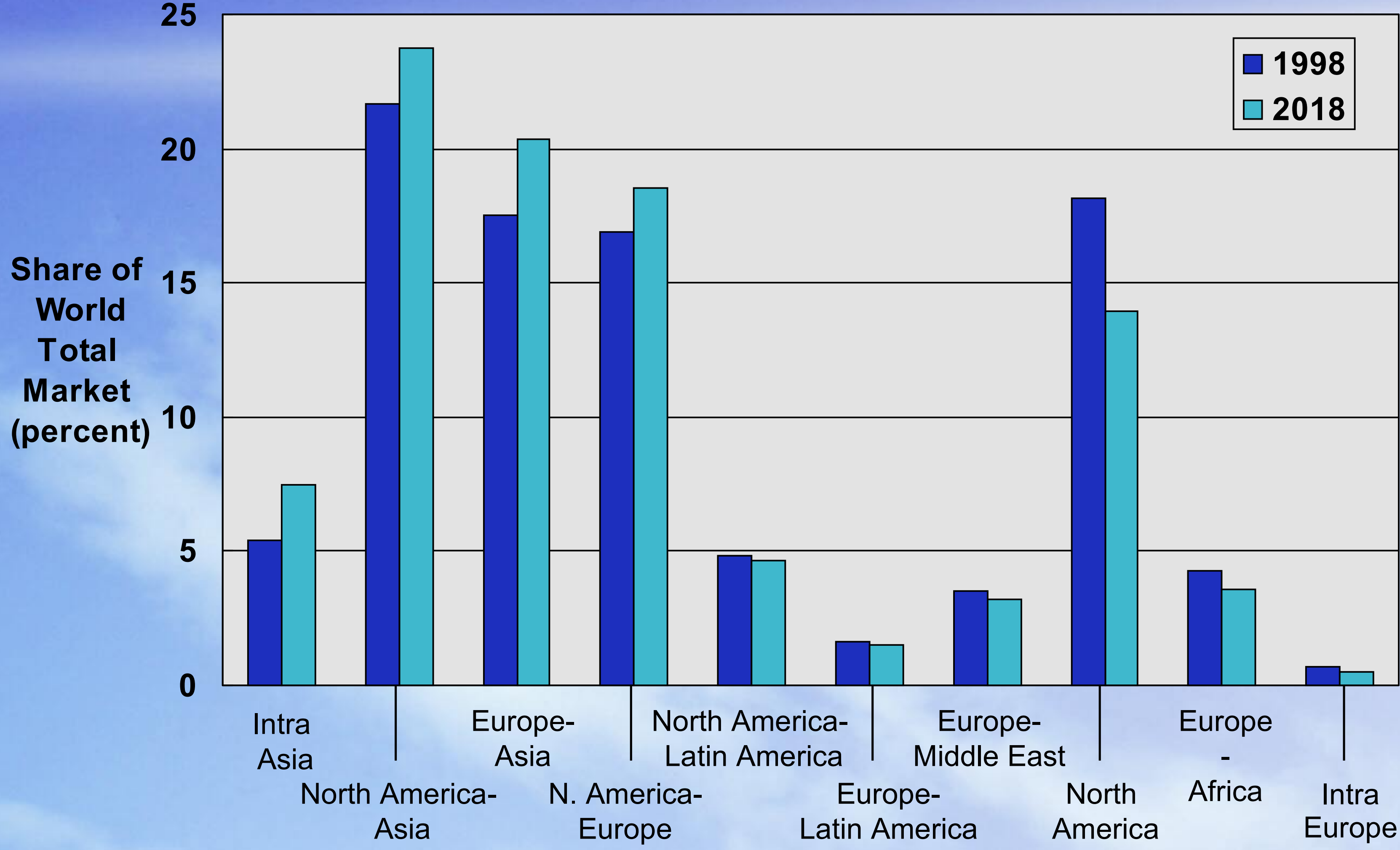
. . . And Increase Their Share of World Freight



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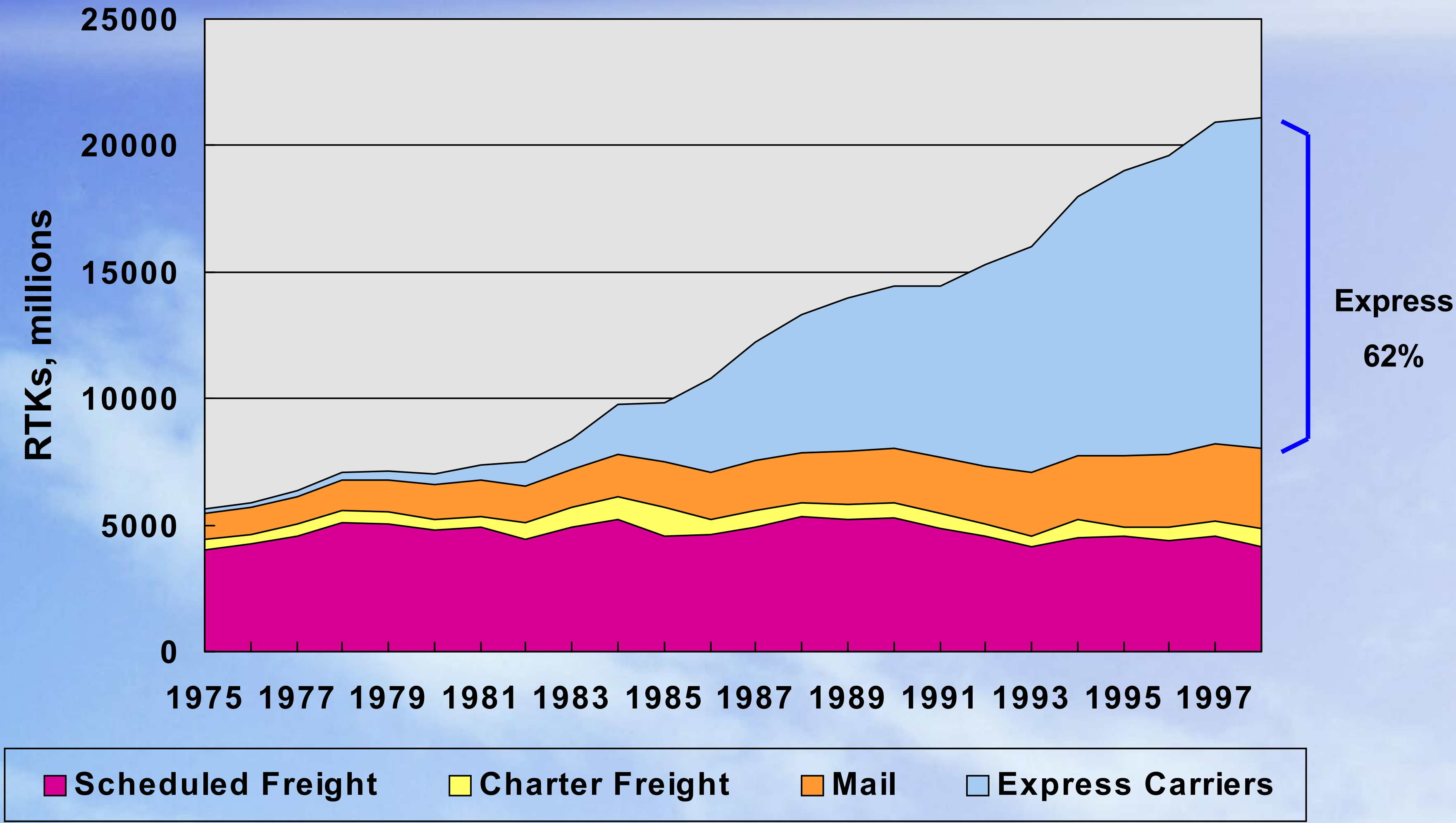
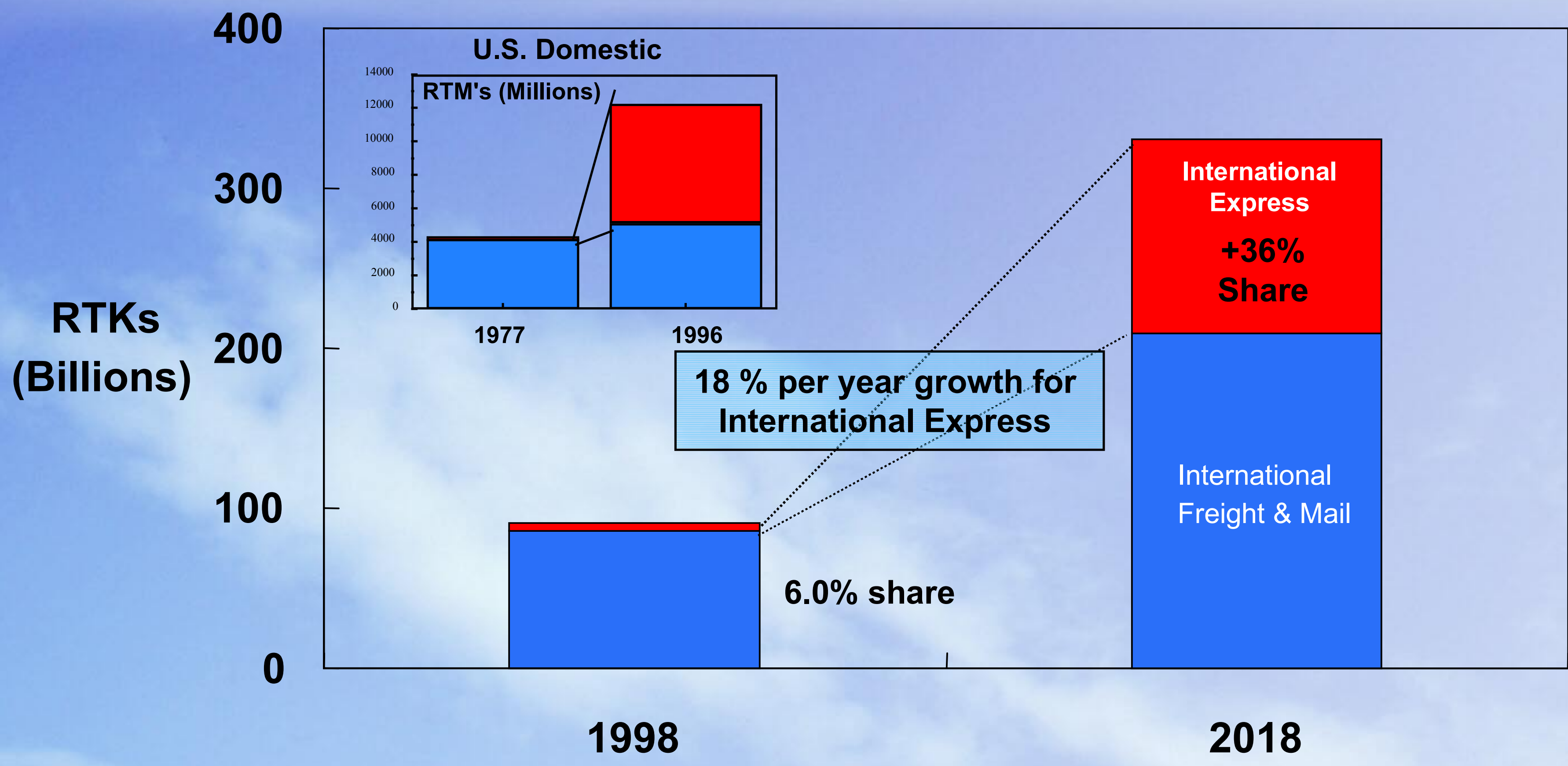
Market Share Gains by Express Carriers Have Become Smaller in U.S. Domestic Market



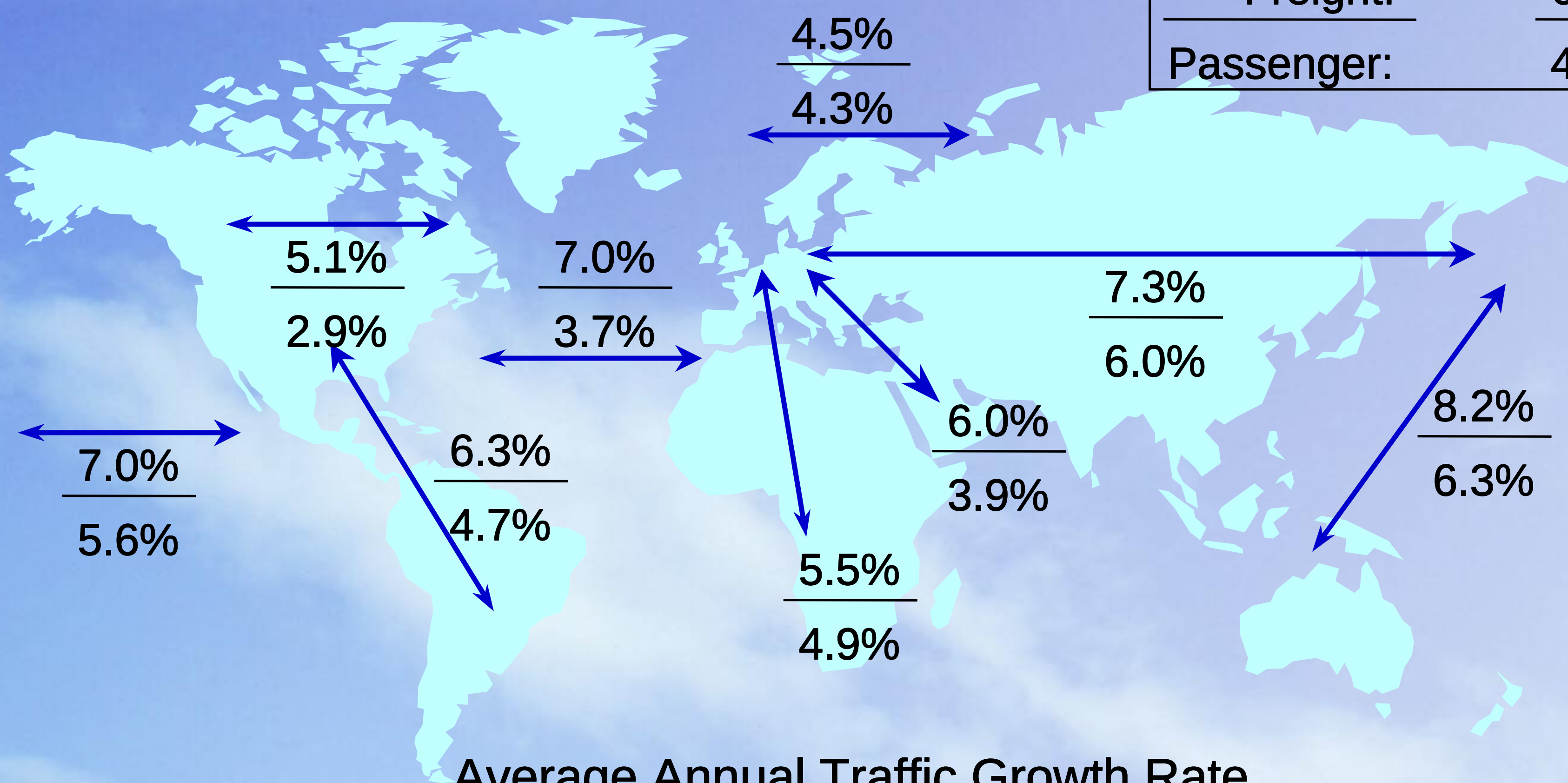
International Express Market Share Will Continue Its Expansion



Cargo Growth Will Outpace Passenger Growth in All Major Markets

World

Freight:	6.5%
Passenger:	4.7%



Average Annual Traffic Growth Rate
1998 - 2018

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Freighter Fleet Forecast

World Freighter Fleet By Payload Size

Small (less than 30 tonnes)	Medium Standard-Body (30 to 50 tonnes)	Medium Wide-Body (40 to 65 tonnes)	Large (Over 65 tonnes)
727	707	DC-10-10	747
737	DC-8	A300 / A310	DC-10-30
DC-9/MD-80	757	L-1011	MD-11
Bae-146		767	

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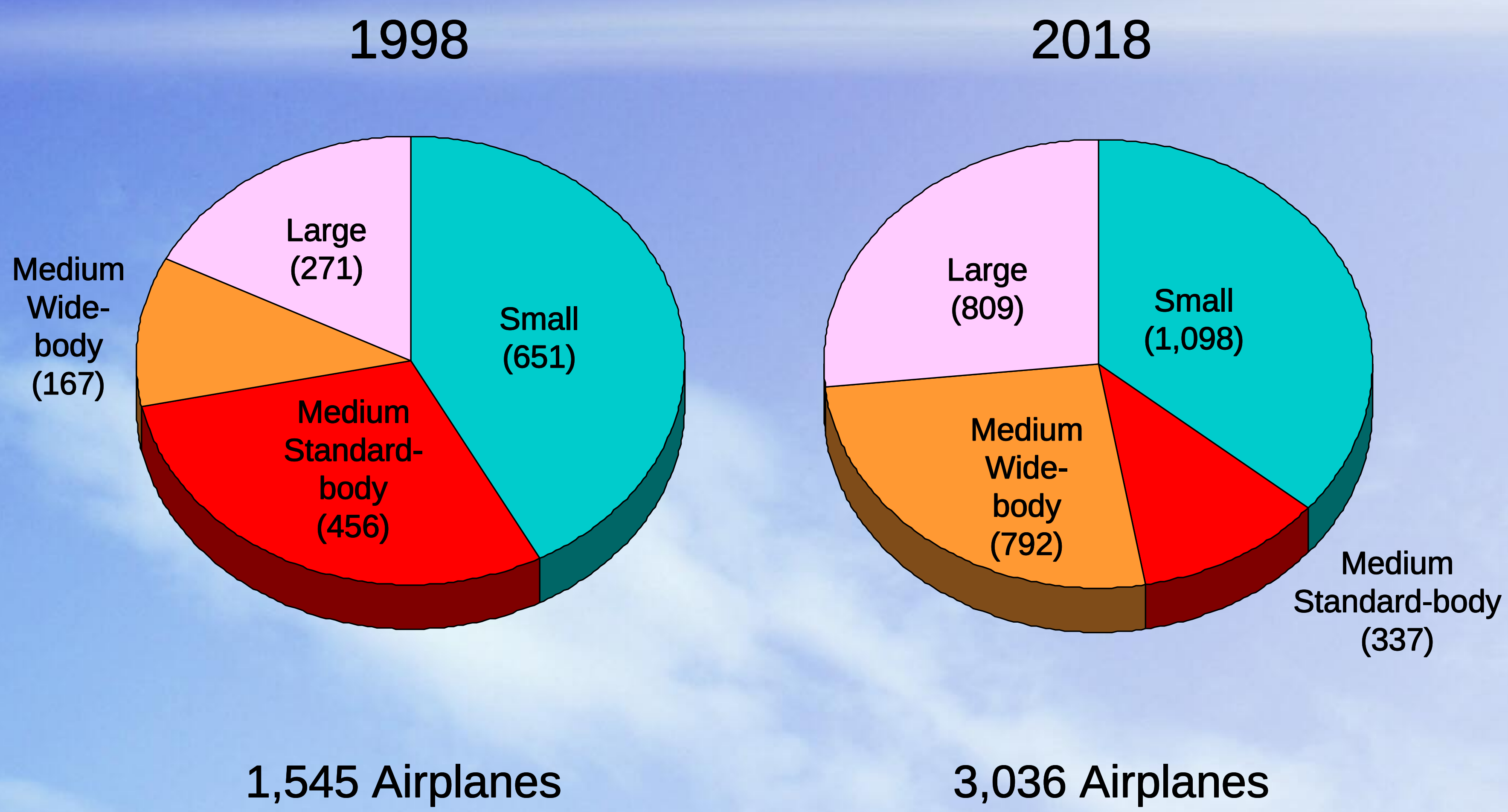
Freighter Fleet Growth Factors

- Continuing air cargo service improvements/customer pressures require:
  - dedicated freighter lift
  - schedules.
- Passenger lower-hold capacity inadequate, as:
  - Continuing high passenger load factors
  - Aircraft operated at payload/range limits
  - Annual forecasted cargo growth (6.4%) is higher than passenger growth (4.7 %)
  - More stringent carry-on baggage requirements reduce space for cargo.
- Availability of good candidates for conversion to freighter aircraft.

The Freighter Fleet Will ***Double***



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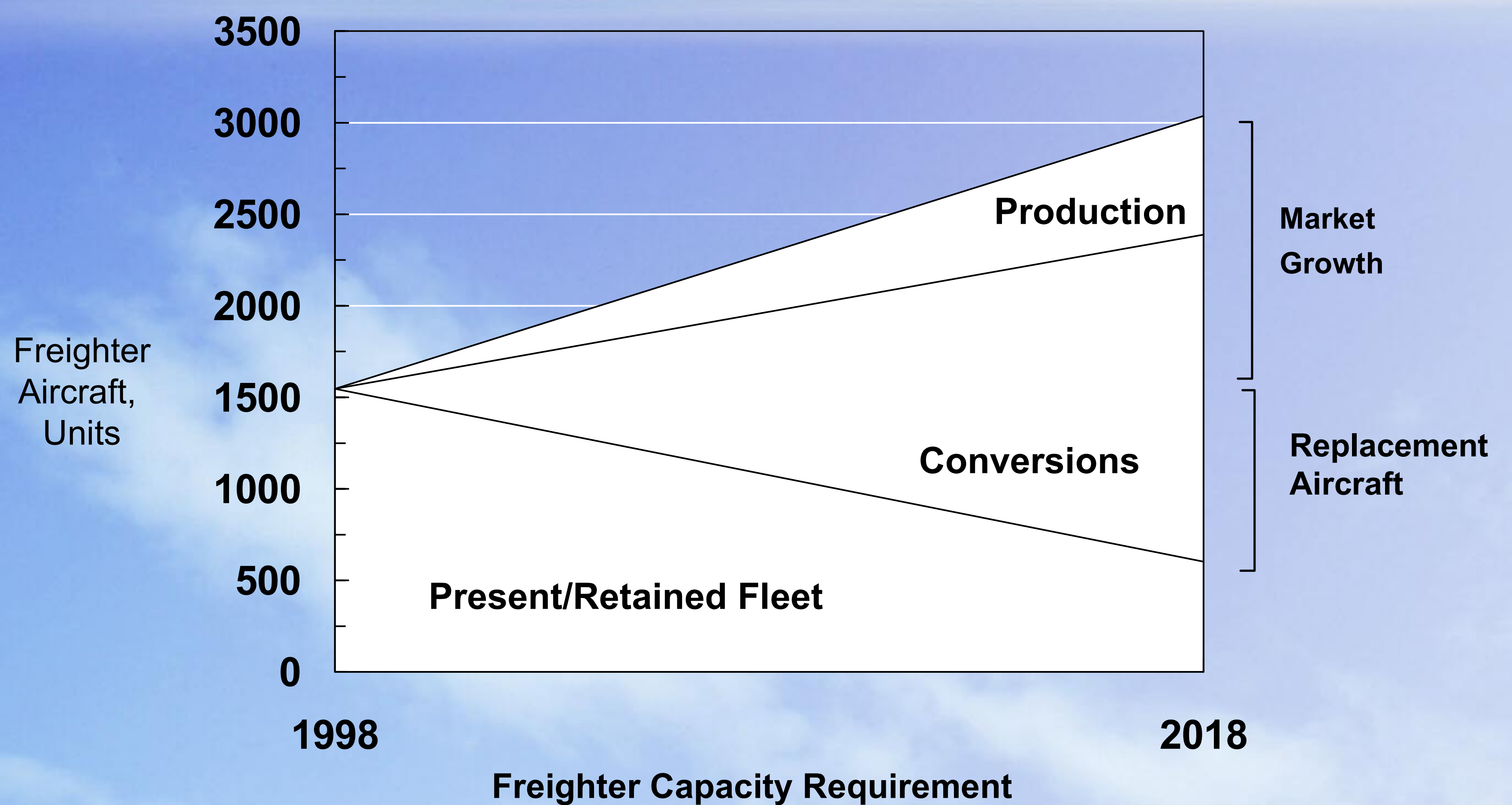
Over Seventy Percent of the Future Freighter Fleet Will Be Modified Airplanes



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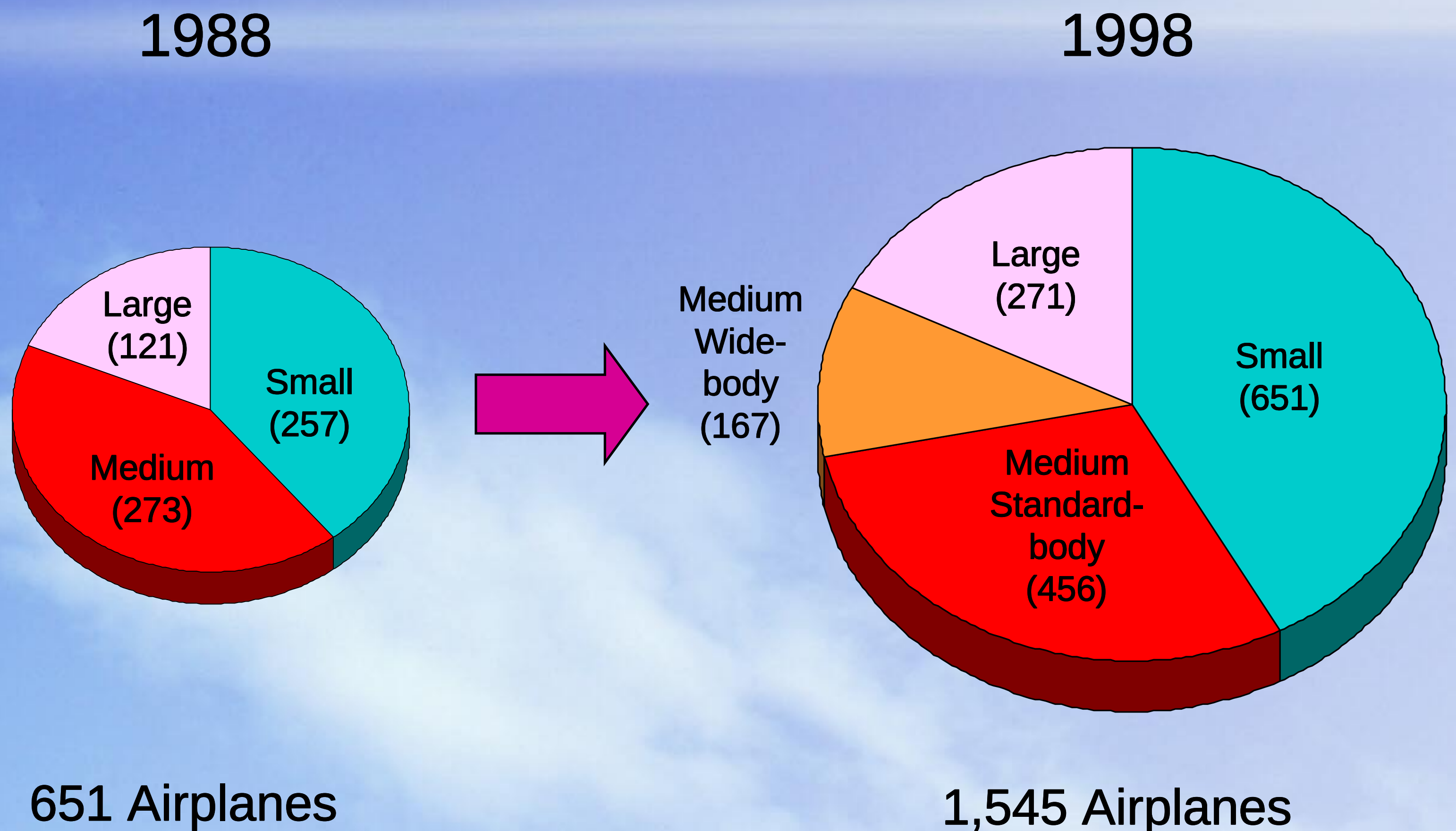
The World Freighter Fleet has More Than ***Doubled*** Since 1988



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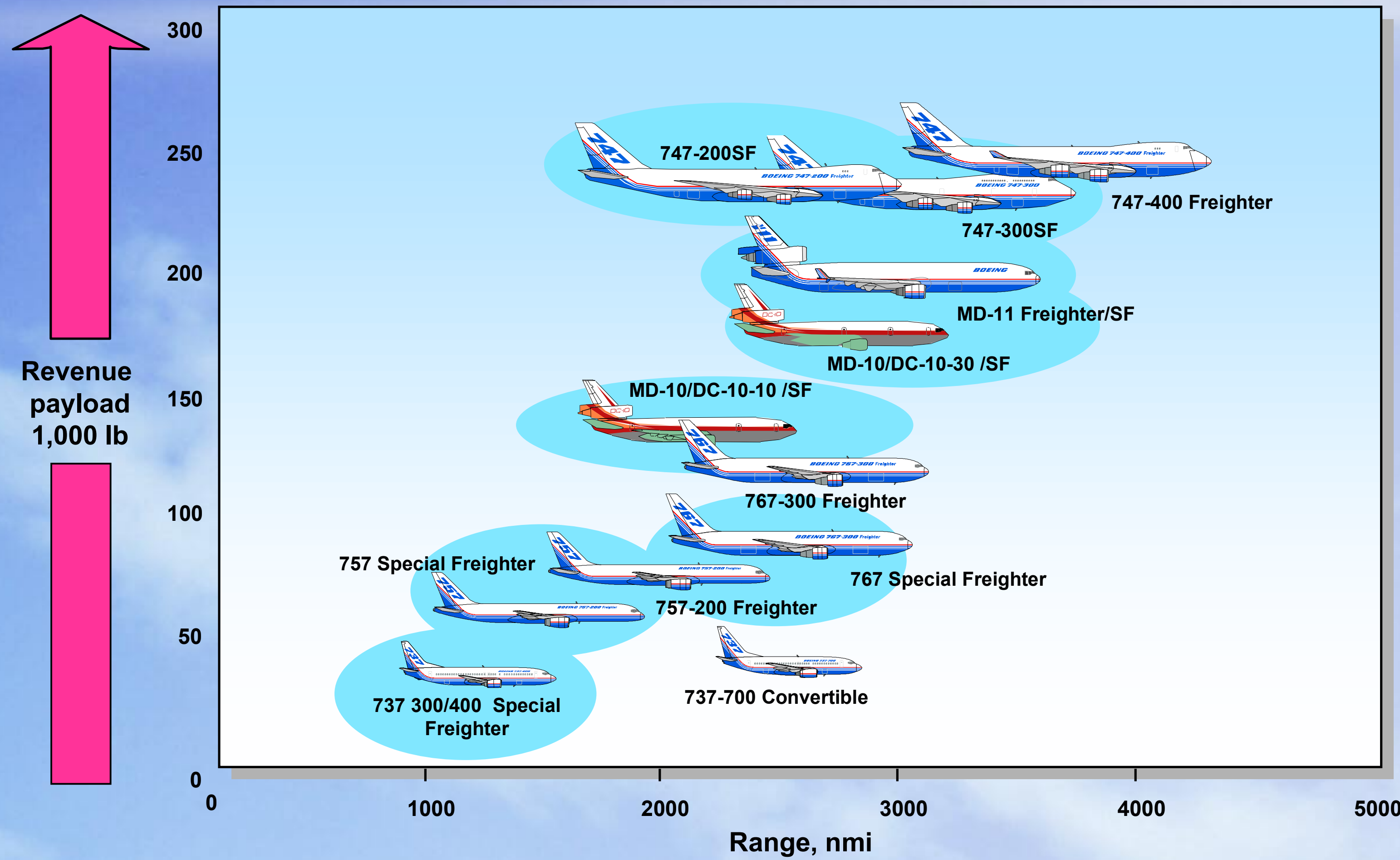
Only Boeing Offers a Complete Freighter Line

Production Freighters and Conversions



- Typical mission rules
- Weight-limited payload

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The Future of Air Cargo

Summary

- Air cargo is a $41 billion per year business.
- Annual air cargo traffic levels will triple over the next 20 years.
- The world freighter aircraft fleet will double in size.